

**ABSTRACT**

A distributed data processing system and method are presented herein for purposes of controlling allocation of resources and task execution. The system includes a communication network that passes  
5 messages between computers connected to the network. A plurality of computers are connected to the network and run programs thereon including a central authority and at least first and second autonomous agents. The central authority generates a graph associated with each agent and wherein each graph represents for the associated agent what  
10 resources that agent has and what task or tasks that agent may perform. Each agent employs the associated graph to determine what resource or resources are needed by that agent to carry out the task or tasks to be performed by that agent. The agents negotiate with each other for the resources needed to carry out the task or tasks to be performed by the  
15 agents.